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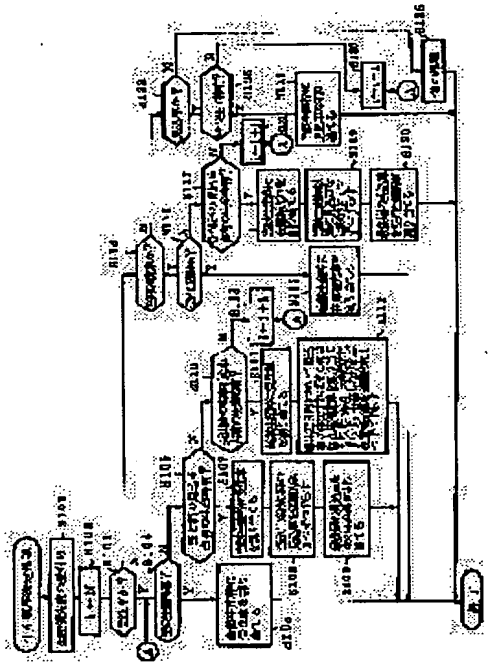
(54) PRODUCTION SEQUENCE MANAGEMENT SYSTEM AND PRODUCTION SEQUENCE DECIDING METHOD

(57)Abstract:
PROBLEM TO BE SOLVED: To surely and more quickly deliver a product for which an order is received to a customer.
SOLUTION: When an empty production frame to which an order receiving vehicle that has the highest production priority is allocated does not exist, and if a prospective vehicle whose production frame is already set and which has the lowest production priority exists, the order receiving car is allocated to the production frame (step 107). A production frame is shifted one by one in a chain manner so that the prospective vehicle giving its production frame can be allocated to the production frame of a prospective vehicle on the subsequent stage for the prospective vehicle that gives its production frame (steps 108 and 109). When a prospective vehicle whose production frame is already set does not exist, if a restocking vehicle whose production frame is already set and which has the second lowest production priority exists, the order receiving vehicle is allocated to the production frame (step 111). A prospective vehicle on the subsequent stage is searched from the position of the production frame of the restocking vehicle and if it exists, the restocking vehicle is allocated to the production frame (step 111). If it does not exist, a restocking vehicle on the same date is searched and a production frame is shifted one by one in a chain manner (step 112).



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[Claim(s)]
[Claim 1] In the system which manages production sequence in the production works which adopted the production system at the time of the order received which starts production of a product according to the received ordering information A production sequence determination processing means to determine production sequence according to the production priority set as ordering information, While receiving a production sequence maintenance means to hold the production sequence of the product which the aforementioned production sequence determination processing means determined with the production priority of each product, and ordering information An order-received processing means to verify whether the ordering information is a thing based on the actual order received from a customer when the highest production priority that means that it is a product of the highest priority is specified to be the received ordering information, When it ****(ed) and the ordering information which received the aforementioned production sequence determination processing means is checked by the aforementioned order-received processing means as it is a thing to the product of the highest priority, The production sequence managerial system characterized by assigning the product of the highest priority at the place of the production sequence of the product of a production priority lower than the product of the highest priority with which production sequence is already set up.
[Claim 2] It is the production sequence managerial system according to claim 1 it carries out [managerial system] searching the aforementioned production sequence determination processing means in an order from the head of the production sequence currently held at the aforementioned production sequence maintenance means when the received ordering information is checked by the aforementioned order-received processing means as it is a thing to the product of the highest priority, and assigning the product of the highest priority to the place of the production sequence of the product of a production priority lower than the product of the highest priority found first as the feature.
[Claim 3] The aforementioned production sequence determination processing means is a production sequence managerial system according to claim 1 characterized by to assign the product for a reassignment concerned at the place of the production sequence of the product when the product for a reassignment which yielded the set-up production sequence to other products is searched in an order from the position of the yielded production sequence and the product of the same production priority as the product for a reassignment concerned exists.
[Claim 4] The aforementioned production sequence determination processing means is a production sequence managerial system according to claim 1 characterized by to assign the product for a reassignment concerned at the place of the production sequence of the product when the product for a reassignment which yielded the set-up production sequence to other products is searched in an order from the position of the yielded production sequence and the product of a production priority lower than the product for a reassignment concerned exists.
[Claim 5] The aforementioned order-received processing means is a production sequence managerial system according to claim 1 characterized by judging with ordering information being a thing based on the actual order received from a customer when customer information is included in ordering information.
[Claim 6] The 1st priority set as the product of the highest priority based on the actual order received from a customer, The 3rd priority lower than the 1st and 2nd priorities set as a product with a chance of saying that an order for them will be placed although possibility of the 2nd priority lower than the 1st priority set as a product with high possibility that an order will be received from sales performance although there is no actual order received, and an actual order received that there is nothing and an order will be received is not high, either The production sequence managerial system according to claim 1 characterized by the ability to set up as a production priority.
[Claim 7] The production sequence managerial system according to claim 1 characterized by having an order processing means to order by sending the ordering information after setting up the highest production priority, while generating ordering information according to the contents of an order received from a customer.
[Claim 8] In the system which manages production sequence in the production works which

adopted the production system at the time of the order received which starts production of a product according to the received ordering information The production sequence determination method characterized by assigning the product of the highest priority concerned at the place of the production sequence of the product of a production priority lower than the product of the highest priority with which production sequence is already set up when the highest production priority that means that it is a product of the highest priority is specified to be the received ordering information.

[Detailed Description of the Invention]
[0001]
[The technical field to which invention belongs] this invention relates to a production sequence managerial system, especially the improved system which enables early delivery of goods of an order-received article by operating production sequence according to a priority in the production line which uses together a production system and a plan production system at the time of an order received.
[0002]
[Description of the Prior Art] From the former, production planning is drawn up in spans decided beforehand, such as a week and the moon, the production frame (number of production) of an operation day by day is determined based on the production planning, and the vehicles which should be manufactured in within the limit [the / production] are assigned and produced at the production works of an automobile. At such production works, although the product covering many forms is manufactured in the same production line for the formation of productive-efficiency expansion etc., the production system and a plan [to expect an certain amount of order received from viewpoints, such as a selling strategy, regardless of the existence of an actual order received, and manufacture vehicles] production system are used together at the time of the order received which usually starts manufacture of the vehicles which are products according to the ordering information from a dealer. Among these, if the flow of the processing in a production system is briefly explained at the time of an order received, in a dealer, the ordering information which set information, such as a dealer name, as the vehicles information about a vehicle name, form, a body color, and vehicles, such as option etc., to order will be generated, and it will send to production works. At production works, the sent ordering information is received as order-received information, and is accumulated one by one. And a production frame is assigned to the span unit decided beforehand to the accumulated unsettled order-received information. For example, the order-received information for 1 week is accumulated, a part for 1 week is summarized and a production frame is assigned. In the former, when vehicles are once assigned to a production frame and an opening is lost in the production frame in a certain span, the order in the span will be closed and will be assigned to the production frame in the following span. If the production frame to order-received information is found, the day (delivery-of-cars scheduled day) which is obtained from the operation day of the secured production frame and which can be delivered will be returned to a dealer. And the vehicles concerned will be manufactured according to vehicles information in the secured production frame, and will be delivered to the dealer ordered on the delivery-of-cars scheduled day.
[0003] By the way, it is a technical problem with how very important from viewpoints, such as improvement in the degree of user satisfaction, or the reliability to manufacture and a selling maker, at the time of an order received when there is an order received from a customer in a production system, vehicles are early sent to the customer. Then, it enables it to send vehicles to a customer at an early stage as follows in the former.
[0004] first -- as the level which a dealer orders to production works -- three, an order-received vehicle, an inventory supplement vehicle, and a prospective vehicle, -- it can divide roughly A "order-received vehicle" says the vehicles which place an order when a contract is made among customers and an order is actually received. An "inventory supplement vehicle" says the vehicles which opted for order on the assumption that it held as stock beforehand according to prediction that it probably sells immediately from the order-received trend (actual result) of a dealer, although it is not an order-received vehicle. It expects and a

"prospective vehicle" says the vehicles which place an order by laying in a stock with expectation that the indefinite element of whether to actually sell is probably large as compared with an inventory supplement vehicle, and probably sells from a national commercial-scene trend for selling profits expansion and expansion of a selling total amount. In a dealer, in case an order-received vehicle is ordered from production works, after adding the priority information which shows a purport to give priority to and manufacture to the ordering information of the order-received vehicle, an order is placed. At production works, if the ordering information from a dealer is received as order-received information and priority information is added to the order-received information, the production frame of a earlier stage will be secured out of an empty production frame to the order-received information. Thus, priority was given to manufacture of an order-received vehicle, and early delivery of cars is realized.

[0005] By the way, a production system and a plan production system are used together at the time of an order received, and the system management equipment for realization of early delivery of goods is indicated by JP,6-44259,A. If the product which is in agreement with the content of an order received (specification) out of the product of the delivery-of-goods place undecidedness which is piling up on a production line is searched with this advanced technology and a product in agreement exists, it is made to bring time for delivery forward, as the product of the delivery-of-goods place undecidedness which is piling up is changed to an order-received product.

[0006]

[Problem(s) to be Solved by the Invention] However, since addition of priority information will be performed based on the setting action by the side of a dealer, although it is possible to add priority information in **** regardless of the existence of an actual order received besides an order-received vehicle for realization of early delivery of cars In the former, since the verification function about the credibility of the priority information was not prepared when determining production sequence, though priority information is added to ordering information other than an order-received vehicle, priority will be given to production sequence according to the priority information. For this reason, there was a possibility of becoming the evil of realization of the early delivery of cars of an actual order-received vehicle.

[0007] moreover, the above-mentioned advanced technology -- like -- the delivery-of-goods place of the same content (specification) -- changing an undecided product to an order-received product -- a delivery-of-goods place -- although the early delivery of goods of an order-received product is realizable if the undecided product is piling up -- the delivery-of-goods place of the same content -- if the undecided product is not piling up, the time for delivery to an order-received product will become the same as the time for delivery to the product which is not an order-received product despite a join office When manufacturing the product with which the rate for which the rate for which a job order production accounts is large than planned production, and the thing of delivery-of-goods place undecidedness accounts becomes small, and the product with which specification determines by the conditions of varieties, such as a type of a car, form, a color, and an option, like the automobile which gave explanation, and the product of the same specification becomes rare, possibility that the product of the delivery-of-goods place undecidedness of the same specification will be found is low, and the early delivery of goods

[0008] It is made in order that this invention may solve the above problems, and the purpose is in offering the production sequence managerial system and the production sequence determination method of delivering a customer certainly the product which received the order early more.

[0009]

[Means for Solving the Problem] In order to attain the above purposes, the production sequence managerial system concerning this invention In the system which manages production sequence in the production works which adopted the production system at the time of the order received which starts production of a product according to the received ordering information A production sequence determination processing means to determine production sequence according to the production priority set as ordering information, While

receiving a production sequence maintenance means to hold the production sequence of the product which the aforementioned production sequence determination processing means determined with the production priority of each product, and ordering information It has an order-received processing means to verify whether the ordering information is a thing based on the actual order received from a customer when the highest production priority that means that it is a product of the highest priority is specified to be the received ordering information. The aforementioned production sequence determination processing means is characterized by assigning the product of the highest priority from the product of the highest priority with which production sequence is already set up at the place of the production sequence of the product of a low production priority, when the received ordering information is checked by the aforementioned order-received processing means as it is a thing to the product of the highest priority. Thereby, regardless of the existence of a production frame, the product of the highest priority is preferentially producible.

[0010] Moreover, it carries out searching the aforementioned production sequence determination processing means in an order from the head of the production sequence currently held at the aforementioned production sequence maintenance means when the received ordering information is checked by the aforementioned order-received processing means as it is a thing to the product of the highest priority, and assigning the product of the highest priority to the place of the production sequence of the product of a low production priority from the product of the highest priority found it first as the feature.

[0011] Moreover, the aforementioned production sequence determination processing means is characterized by assigning the product for a reassignment concerned at the place of the production sequence of the product, when the product for a reassignment which yielded the set-up production sequence to other products is searched in an order from the position of the yielded production sequence and the product of the same production priority as the product for a reassignment concerned exists. Since it shifts the product of the same production priority one [at a time] continuously and the reassignment is carried out by carrying out by repeating this, the product whose order was received later is not produced previously.

[0012] Moreover, the aforementioned production sequence determination processing means is characterized by assigning the product for a reassignment concerned at the place of the production sequence of the product, when the product for a reassignment which yielded the set-up production sequence to other products is searched in an order from the position of the yielded production sequence and the product of a low production priority exists from the product for a reassignment concerned. Thereby, a product with a high production priority is preferentially producible.

[0013] Moreover, the aforementioned order-received processing means is characterized by judging with ordering information being a thing based on the actual order received from a customer, when customer information is included in ordering information.

[0014] Moreover, the 1st priority set as the product of the highest priority based on the actual order received from a customer, From the 1st and 2nd priorities set as a product with a chance of saying that an order for them will be placed from the 1st priority set as a product with high possibility that an order will be received from sales performance although there is no actual order received although possibility of the 2nd priority of a low and an actual order received that there is nothing and an order will be received is not high, either, the 3rd priority of a low It is characterized by the ability to set up as a production priority.

[0015] Furthermore, while generating ordering information according to the content of an order received from a customer, after setting up the highest production priority, it is characterized by having an order processing means to order by sending the ordering information.

[0016] Moreover, the production sequence determination method concerning this invention is set to the system which manages production sequence in the production works which adopted the production system at the time of the order received which starts production of a product according to the received ordering information. When the highest production priority that means that it is a product of the highest priority is specified to be the received ordering information, it is characterized by assigning the product of the highest priority concerned

from the product of the highest priority with which production sequence is already set up at the place of the production sequence of the product of a low production priority.
[0017]
[Embodiments of the Invention] Hereafter, the gestalt of suitable operation of this invention is explained based on a drawing.
[0018] Drawing 1 is the functional-block block diagram having shown the gestalt of 1 operation of the production sequence managerial system concerning this invention. With the gestalt of this operation, the product sold to a customer is an automobile, and the case where production sequence in the production line of the vehicles is determined is made into an example, and it explains. Therefore, the dealer 10 which performs selling business of an automobile, and the production works 20 which manufacture and deliver vehicles according to the order from a dealer 10 are shown in drawing 1 . Although operating processing of order-received management of a customer, part supply, etc. occurs and the operating engine for it is needed actually, since it is unnecessary especially in the gestalt of this operation, explanation is omitted. Moreover, although two or more dealers 10 are usually installed, in order to perform the processing that every dealer is the same, only one store is illustrated for convenience. Furthermore, since it is not the feature of the gestalt of this operation about the transmitter style of a dealer 10 and the production works 20, it omits.
[0019] The order receptionist processing section 12 which receives the order from a customer and generates ordering information 11, and the order processing section 13 which sends the ordering information generated by adding an order partition (production priority) to order processing, i.e., ordering information, are formed in the dealer 10. Maintenance management of the ordering information generated by the order processing section 13 is carried out in the ordering information database (DB) 14.
[0020] The production works 20 are manufacturing vehicles with the production line which used together the production system and the plan production system at the time of an order received and which is not illustrated. The order-received processing section 22 which holds it as order-received information 21, and the production sequence determination processing section 23 which determines production sequence according to the order partition (production priority) set as order-received information are formed in the production works 20 by receiving the ordering information from a dealer 10. The production sequence determination processing section 23 accumulates the determined production sequence in the production receptionist information database (DB) 24. Moreover, production sequence is determined using the production sequence managed table 25. In addition, the data treated in the gestalt of this operation are collectively explained, when explaining the content of processing.
[0021] The rough flow of processing until it orders from the production works 20 from a dealer 10 in the above composition and is delivered according to the order is as follows. That is, if an order of a customer is attached in a dealer 10, ordering information will be generated according to the content of an order received, and it will send to the production works 20. At the production works 20, the production frame of the vehicles concerned is secured based on the sent ordering information. And it returns to a dealer 10 by making the time for delivery (delivery-of-cars scheduled day) of the vehicles called for from the operation day of the secured production frame into reply time for delivery. The customer who placed an order for the reply time for delivery is told about a dealer 10. And the ordered vehicles will be manufactured according to the production directions generated based on the vehicles information included in ordering information in the secured production frame, and will be delivered to a dealer 10 by reply time for delivery. Hereafter, the detail of processing is explained until production sequence is determined at the production works 20. First, shell explanation is given about the processing at the time of ordering in a dealer 10.
[0022] Drawing 2 is drawing having shown the data composition of the ordering information in the gestalt of this operation. Ordering information consists of an order partition and ordering information. In order to manage an order, the vehicles information which specified the specification of the vehicles which wish the customer name as customer information for specifying the order number are uniquely numbered in all dealers, the dealer name which places an order with the production works 20, and the customer who placed an order, the time

for delivery of choice, and manufacture etc. is included in ordering information. A dealer specifies the level ordered to production works to be an order partition. although it is uncertain whether it actually sells to see and exceed that it sells immediately that a dealer 10 places an order to the production works 20 when a contract is made among customers and an order is actually received, and fill up the inventory vehicle, it is the case which sells from a commercial-scene trend and which is referred to as coming out where he wants to expect, come out and lay in a stock That is, it is order of the order-received vehicle mentioned above, an inventory supplement vehicle, and a prospective vehicle. Therefore, the exception of the level is specified to be an order partition. With the gestalt of this operation, "A" and an inventory supplement vehicle are made "B" and to express a prospective vehicle as "C" for an order-received vehicle.

[0023] In placing an order for an inventory supplement vehicle or a prospective vehicle in a dealer 10, it generates the ordering information which set data as each item and was shown in drawing 2 . However, since the customer has not stuck yet in this case, a setup of a customer name cannot be performed. And "B" or "C" which shows an inventory supplement vehicle or a prospective vehicle further is set as an order partition, and ordering information is generated. On the other hand, when the order from a customer is received, vehicles information is set up according to the content of an order received from a customer, and other information is set up if needed, and ordering information is generated. A customer name can be set up especially in this case. And "A" which shows an order-received vehicle further is set as an order partition, and ordering information is generated. Then, order processing is completed by sending the generated ordering information to the production works 20, and it waits for the reply time for delivery from the production works 20.

[0024] With the gestalt of this operation, it is characterized by adding the order partition which specified the level of the vehicles ordered from ordering information as mentioned above. It can also be said that the level of the vehicles specified to be this order partition is the level of the priority manufactured. That is, it can be said that order-received vehicles are vehicles which manufacture by top priority as much as possible, and wish early delivery of cars since the order received was actually received, and they are the product of the highest priority which should be manufactured with the highest priority. It can be said that an inventory supplement vehicle is the product which should be relatively manufactured with a high priority although it is lower than an order-received vehicle, since an order may be received immediately, although it is not necessary to treat on a par with an order-received vehicle since an order is not actually placed. Since it is the product which cannot necessarily say that the order received with an actual prospective vehicle has high possibility that there is nothing and an order will be received, it can be said that it is the product which should be manufactured with a low priority from an order-received vehicle and an inventory supplement vehicle. Thus, it adds to ordering information and was made to send to the side which places an order for the priority with which vehicles are manufactured as an index which determines the production sequence of the ordered vehicles at the production works 20 in the gestalt of this operation. The priority with which the vehicles specified to be this order partition are manufactured will be called a "production priority" by this application.

[0025] At the production works 20, if the ordering information from each dealer 10 is received, although production sequence will be determined based on the production priority, this processing is explained using the flow chart shown in drawing 3 and drawing 4 , and the ** type view shown in 5. First, drawing 4 and the view of 5 are explained.

[0026] With the gestalt of this operation, the production frame in a production day is considered as five sets for convenience. That is, the production line in this production works 20 shows that every five vehicles can be manufactured in each production day. In drawing 4 , a horizontal axis is a production day and a vertical axis is a production frame. Although a production day is usually expressed with days and months, it makes N days the first day which can change [determination/] production sequence for convenience here, and makes it express a subsequent production day with the days (N+1, N+2, ..., N+m) from the first day. When the production frame shown with the rectangle is blank, it means that the vehicles which should be manufactured in the production frame are not assigned yet. The character

string begun by "A" in the production frame which is not blank means the thing of a production priority "A" for which the order-received vehicle is assigned. The number following "A" was uniquely attached, in order to discriminate from other order-received vehicles. The same is said of a production priority "B" and "C." The character string which starts with this alphabetic character is not related to the order number which uses in case it explains, and is contained in ordering information.

[0027] Moreover, with the gestalt of this operation, production sequence is determined using the production sequence managed table 25. The example of composition of this production sequence managed table 25 was shown in drawing 6 . The production sequence managed table 25 is developed by memory, and the already determined production sequence is held. The production day is the same as the production day in drawing 4 , and the production sequence number shows the order of a list of the production frame in each production day. A production frame can be specified with a meaning by the production day and the production sequence number. The production priority of the vehicles assigned to each production frame is set to a production priority. It is the order number set as the ordering information of the vehicles assigned to each production frame at the order number. Correlation with the order-received information 21 and the production receptionist information database 24 can be performed by this order number. Hereafter, the processing in the production works 10 is explained.

[0028] The order-received processing section 22 will be accumulated in the order-received information database 21 by making it into order-received information, if the ordering information from each dealer 10 is received. That is, the content of ordering information and order-received information is in agreement. Here, the order-received processing section 22 confirms whether the customer name is specified, when the order partition which shows that the production priority added to the received ordering information is an order-received vehicle is specified. If the customer name is specified, the received ordering information can judge with it being a thing based on the actual order received from a customer. Temporarily, if the customer name is not specified, how depending on which the dealer 10 which placed an order brings a delivery-of-cars stage forward, and an order partition will be told that an unjust setup was carried out. Thus, according to the gestalt of this operation, since the verification function about the credibility of an order partition (production priority) was prepared, such an unjust order can be prevented beforehand.

[0029] The production sequence determination processing section 23 will perform the following processings according to the content of the production priority, if the production priority added to ordering information is received (Step 101). Fundamentally, it processes in order of registration of ordering information. First, shell explanation is given about the case where a production priority is "A" which shows an order-received vehicle (Step 103).

[0030] The production sequence determination processing section 23 searches even the 1st to the 5th production frame in order in the head (N days) of production sequence, i.e., the first day of a production day, and looks for an empty production frame (Step 102,104). This can search the production sequence managed table 25 in an order from a head, and can judge it by the existence of a setup of a production priority. If an empty production frame exists, the order-received vehicle concerned will be assigned there (Step 105).

[0031] When an empty production frame does not exist in the first day (N days) of a production day (Step 104), it is confirmed whether the production frame on Nth concerned is already occupied by the prospective vehicle (Step 106). For example, as shown in drawing 4 (a), when the prospective vehicle "C1" is assigned to the 5th production frame on Nth, the order-received vehicle "A8" concerned is assigned to the production frame (Step 107). Although the reassignment of a production frame must be made the prospective vehicle "C1" which delivered the production frame concerned and yielded production sequence, with the gestalt of this operation, a reassignment is performed as follows.

[0032] First, the production frame which searches in an order from the position (the 5th [N-day]) of the yielded production frame, and the prospective vehicle of the same production priority occupies is looked for. In addition, it searches in this case exceeding a production day. If the corresponding production frame exists, a prospective vehicle "C1" will be assigned there. According to the example shown in drawing 4 (a), since the prospective vehicle "C2" is

assigned to the 3rd production frame on N+the 1st, a prospective vehicle "C1" is assigned here. Shortly, the production frame which searches in an order from the position (the 3rd per N+day) of the production frame yielded like the above although the reassignment of a production frame had to be made the sake of the prospective vehicle "C2" which yielded the production frame to the prospective vehicle "C1", and the prospective vehicle of the same production priority occupies is looked for. According to the example shown in drawing 4 (a), since the prospective vehicle "C3" is assigned to the 4th production frame on N+the 1st, a prospective vehicle "C2" is assigned here. Thus, it shifts the prospective vehicle one [at a time] continuously in an order from the production frame yielded to the order-received vehicle (Step 108). And in the prospective vehicle at the tail end (at the example shown in drawing 4 (a), it is the 5th "the C4" per N+day), an empty production frame (at the example shown in drawing 4 (a), it is the 2nd [N+2-day]) is assigned (Step 109). The newly determined production sequence is shown in drawing 4 (b) as a result of the processing performed in the production sequence of drawing 4 (a).

[0033] When the production frame which an empty production frame does not exist in the first day (N days) of a production day, and is occupied by the prospective vehicle does not exist, either, it is confirmed whether the production frame on Nth concerned is already occupied by the inventory supplement vehicle (Step 110). For example, as shown in drawing 4 (c), when the inventory supplement vehicle "B1" is assigned to the 4th production frame on Nth, the order-received vehicle "A8" concerned is assigned to the production frame (Step 111). Although the reassignment of a production frame must be made the inventory supplement vehicle "B1" which delivered the production frame concerned and yielded production sequence, with the form of this operation, a reassignment is performed as follows (Step 112).

[0034] That is, the production frame which the prospective vehicle of a low production priority occupies within the same day in an order from the position (the 4th [N-day]) of the yielded production frame is looked for. If it exists, an inventory supplement vehicle "B1" will be assigned there. The reassignment of a subsequent prospective vehicle performs a reassignment in the level of a prospective vehicle like Step 108,109. If a chance [of corresponding] vehicle does not exist, the production frame which the inventory supplement vehicle of the same production priority occupies is looked for. If the corresponding production frame exists, an inventory supplement vehicle "B1" will be assigned there. According to the example shown in drawing 4 (c), since the inventory supplement vehicle "B-2" is assigned to the 5th production frame on Nth, an inventory supplement vehicle "B1" is assigned here. Although the reassignment of a production frame must be shortly made the inventory supplement vehicle "B-2" which yielded the production frame concerned, the production frame which searches in an order from the position (the 5th [N-day]) of the production frame yielded like the above, and the prospective vehicle of a low production priority occupies within the same day is looked for. If it exists, an inventory supplement vehicle "B-2" will be assigned there. The reassignment of a subsequent prospective vehicle performs a reassignment in the level of a prospective vehicle like Step 108,109. If a chance [of corresponding] vehicle does not exist, the production frame which the inventory supplement vehicle of the same production priority occupies is looked for. Since a chance [of corresponding] vehicle, or inventory supplement vehicle does not exist according to the example shown in drawing 4 (c), either, a processing-object day is made into N+ one day of the next day. And the same processing as the above is performed within the next day. That is, the production frame first occupied by the prospective vehicle is looked for. If it exists, an inventory supplement vehicle "B-2" will be assigned there. According to the example shown in drawing 4 (c), since the prospective vehicle "C1" is assigned to the 4th production frame on N+the 1st, an inventory supplement vehicle "B-2" is assigned here. Thereby, shortly, although the reassignment of a production frame must be made the prospective vehicle "C1" which yielded the production frame concerned, the reassignment from this prospective vehicle "C1" to the prospective vehicle at the tail end is performed like Step 108,109. Temporarily, if a prospective vehicle does not exist within N+ one day, the production frame which the inventory supplement vehicle of the same production priority occupies is looked for, and if it exists, the inventory supplement vehicle concerned will be assigned to the production frame. Since it is the same as

N days which gave [above-mentioned] explanation also of the processing in N+ one day, the processing mentioned above will be repeated.

[0035] Furthermore, when the production frame which an empty production frame does not exist in the first day (N days) of a production day, and is occupied by the prospective vehicle and the inventory supplement vehicle does not exist, either (i.e., when all the production frames on Nth are already occupied by the order-received vehicle), processing which updated the processing-object day at the next day (N+ one day), and gave [above-mentioned] explanation is performed (Step 113).

[0036] The production sequence of an order-received vehicle can be determined by repeating the above processing and performing it. According to the production sequence newly determined that the production sequence in the whole vehicles also including the prospective vehicle or inventory supplement vehicle which yielded the production frame is determined as an order-received vehicle and an order-received vehicle, or an inventory supplement vehicle, a production priority and an order number are set as the production sequence managed table 25, respectively. And the production receptionist information database 24 is updated according to the contents of the production sequence managed table 25 and the order-received information 21. The example of the data composition stored in the production receptionist information database 24 is shown in drawing 7 .

[0037] According to the form of this operation, it can consider as the production sequence over which priority was always given to the order-received vehicle to the prospective vehicle and the inventory supplement vehicle. Although I have a production frame yielded from the vehicles when a chance [of already having been assigned] vehicle, or an inventory supplement vehicle exists, the order-received vehicle is giving priority to the inventory supplement vehicle between a prospective vehicle and an inventory supplement vehicle also in this case, when assigning the production frame which the inventory supplement vehicle occupied. Moreover, in the form of this operation, the vehicles of the same level received behind can prevent being manufactured on a previous production day by shifting every one vehicles of the same level from the production frame currently assigned to the prospective vehicle or inventory supplement vehicle which yielded the production frame to the order-received vehicle, rather than assigning an empty production frame unconditionally. Though this yields the already set-up production frame, the order of a receptionist of an order can be observed between the vehicles of the same level. Moreover, that it is hard to produce delay of a large production day since it shifts the set up production frame one [at a time] continuously, since it is the reassignment of a production frame to the vehicles which have not further actually received the order, after reporting reply time for delivery, there is almost no bird clapper in a serious problem.

[0038] In addition, in drawing 4 (b) which showed the state after a production frame reassignment, an inventory supplement vehicle "B1" is manufactured before an order-received vehicle "A8." This is because the prospective vehicle existed on the same day. If it is on the same day, it will be thought that after the point for several sets is especially satisfactory. What is necessary is just to rearrange in the production day set as the reassignment object of a production frame, after determining a production frame, if you want to give priority to an order-received vehicle "A8" over all inventory supplement vehicles, and to manufacture it strictly. Moreover, in drawing 4 (d), an inventory supplement vehicle "B-2" and the turn of "B3" are reverse. This is the shell which gave priority to the inventory supplement vehicle [finishing / a setup], and was previously made into the candidate of reservation of a production frame from the prospective vehicle. What is necessary is just to rearrange in the production day which corresponds as mentioned above, if you want to rearrange strictly.

[0039] Next, the case where a production priority is "B" which shows an inventory supplement vehicle is explained (Step 103,114).

[0040] The production sequence determination processing section 23 searches even the 1st to the 5th production frame in order in the head (N days) of production sequence, i.e., the first day of a production day, and looks for an empty production frame (Step 115). If an empty production frame exists, the inventory supplement vehicle concerned will be assigned there

(Step 116).
[0041] When an empty production frame does not exist in the first day (N days) of a production day (Step 115), it is confirmed whether the production frame on Nth concerned is already occupied by the prospective vehicle (Step 117). For example, as shown in drawing 5 (e), when the prospective vehicle "C1" is assigned to the 5th production frame on Nth, the inventory supplement vehicle "B-2" concerned is assigned to the production frame (Step 118). Although the reassignment of a production frame must be made the prospective vehicle "C1" which delivered the production frame concerned and yielded production sequence, since a chain of reassignment (Step 119,120) accompanying a reassignment of a prospective vehicle "C1" is the same as that of Step 108,109, explanation is omitted. The newly determined production sequence is shown in drawing 5 (f) as a result of the processing performed in the production sequence of drawing 5 (e).
[0042] When the production frame which an empty production frame does not exist in the first day (N days) of a production day, and is occupied by the prospective vehicle does not exist, either (i.e., when all the production frames on Nth are already occupied by the order-received vehicle or the inventory supplement vehicle), processing which updated the processing-object day at the next day (N+ one day), and gave [above-mentioned] explanation is performed (Step 121). Consequently, when a chance [that the production frame is assigned] vehicle exists, priority can be given to an inventory supplement vehicle over a prospective vehicle, and a production frame can be assigned.
[0043] Next, the case where a production priority is "C" which shows a prospective vehicle is explained (Step 103,114,122).
[0044] The production sequence determination processing section 23 searches even the 1st to the 5th production frame in order in the head (N days) of production sequence, i.e., the first day of a production day, and looks for an empty production frame (Step 123). If an empty production frame exists, the prospective vehicle concerned will be assigned there (Step 124). When an empty production frame does not exist in the first day (N days) of a production day, processing which updated the processing-object day at the next day (N+ one day), and gave [above-mentioned] explanation is performed (Step 125). Consequently, allocation in the production frame of a prospective vehicle can be performed.
[0045] Furthermore, predetermined processing is performed when a production priority is not "A", "B", and "C" which show an order-received vehicle, an inventory supplement vehicle, and a prospective vehicle (Step 126). For example, in the gestalt of this operation which is using together the production system and the plan production system at the time of an order received, a production priority judges the case of "A", "B", and "C" where they are not any, either to be the vehicles according to the planned production instead of vehicles which manufactures by order received, and assigns an empty production frame to the vehicles concerned. Supposing it has adopted only the production system at the case where production priorities, such as "D", are set up to the vehicles according to planned production, or the time of an order received, error processing will be performed in this case.
[0046] When a production day is determined according to the order from a dealer 10 as mentioned above, reply time for delivery will be reported to a dealer 10.
[0047] Since the order-received vehicle is assigned at the place of the production frame already assigned to the low prospective vehicle of a production priority, or the inventory supplement vehicle product and it was made to manufacture preferentially according to the gestalt of this operation even if there was no empty production frame to an order-received vehicle, an order-received vehicle can be certainly delivered to a customer more early.
[0048] In addition, if the determination method of the production sequence in the gestalt of this operation is followed, since the order-received vehicle would be assigned preferentially, as production sequence was shown in drawing 4 , a prospective vehicle or an inventory supplement vehicle will not be assigned before an order-received vehicle "A6" and "A7." Therefore, the production sequence shown in drawing 4 is an example.
[0049] With the gestalt of this operation mentioned above, although considered as the above composition, it was not restricted to this and various change can be added. For example, with the gestalt of this operation, if two or more production lines exist in the production works 20,

the information will also be taken into consideration and production sequence will be determined. Moreover, although the production system and the plan production system were used together with the gestalt of this operation at the time of an order received, only a production system is applicable at the time of an order received. Furthermore, one is sufficient although the whole system was considered as the composition which separated the selling base and the production base.

[0050] Moreover, with the form of this operation, all the vehicles ordered from the production works 20 are considering as the candidate of the reassignment of a production frame equally. Therefore, in a certain dealer 10, the delivery-of-cars scheduled day of an inventory supplement vehicle or a prospective vehicle will wind by the order of the order-received vehicle from other dealers 10, and it will fall. As long as it makes it want to affect it on the delivery-of-cars scheduled day to other dealers 10, you may carry out adding a dealer code etc. to the conditions in the case of the determination of production sequence etc.

[0051] Moreover, although the data about production sequence are developed in memory and the production sequence managed table 25 was formed as a production sequence maintenance means with the form of this operation in order to attain improvement in the speed of processing, the data set as this are altogether contained in the production receptionist information database 24. Therefore, if the production receptionist information database 24 is used as a production sequence maintenance means, it is not necessary to form the production sequence managed table 25 separately.

[0052] Moreover, you may enable it to set up separately although the order partition in ordering information was made into the production priority as it was.

[0053] Furthermore, although it was made the example of an automobile as a product and the gestalt of this operation explained, if it manufactures by the production system at the time of an order received, it will not be caught by the kind of product. And according to the kind of product, it may be two or the level of order may also be four or more.

[0054]

[Effect of the Invention] Since the ordered product is used as the product of the highest priority which is the highest production priority, the product of the highest priority is assigned at the place of the production sequence already assigned to the low product of a production priority from the product of the highest priority and it was made to manufacture preferentially according to this invention, the product which received the order can be certainly delivered to a customer more early.

[0055] Moreover, since the verification function about the credibility of the production priority added to ordering information was prepared, the order which is going to bring delivery of goods forward unfairly can be prevented beforehand.

[0056] Moreover, since the product for a reassignment which yielded the set-up production sequence to other products is searched in an order from the position of the yielded production sequence and the product for a reassignment was assigned at the place of the production sequence of the product of a low production priority, it can consider as the production sequence according to the production priority.

[0057] Moreover, the product for a reassignment which yielded the set-up production sequence to other products is searched in an order from the position of the yielded production sequence, and the product for a reassignment was assigned at the place of the production sequence of the product of the same production priority. That is, since the production sequence of having set up was shifted continuously, the order of a receptionist of an order can be observed between the products of the same production priority.

[Brief Description of the Drawings]

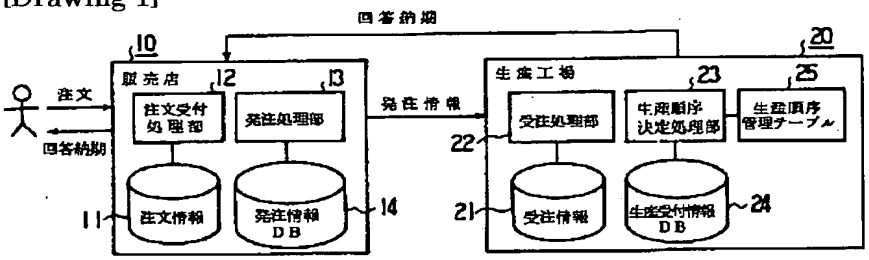
[Drawing 1] It is the functional-block block diagram having shown the gestalt of 1 operation of the production sequence managerial system concerning this invention.

[Drawing 2] It is drawing having shown the data composition of the ordering information in the gestalt of this operation.

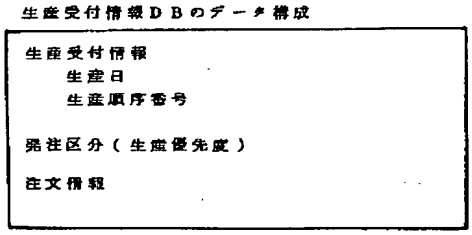
[Drawing 3] It is the flow chart which showed the production sequence determination processing in the gestalt of this operation.

[Drawing 4] It is a ** type view for explaining the production sequence determination processing in the gestalt of this operation.
[Drawing 5] It is a ** type view for explaining the production sequence determination processing in the gestalt of this operation.
[Drawing 6] It is drawing having shown the example of composition of the production sequence managed table in the gestalt of this operation.
[Drawing 7] It is drawing having shown the example of data composition of the production receptionist information database in the gestalt of this operation.
[Description of Notations]
10 A dealer, 11 Ordering information, 12 The order receptionist processing section, 13 The order processing section, 14 An ordering information database (DB), 20 Production works, 21 Order-received information, 22 order-received processing section, 23 The production sequence determination processing section, 24 A production receptionist information database (DB), 25 Production sequence managed table.

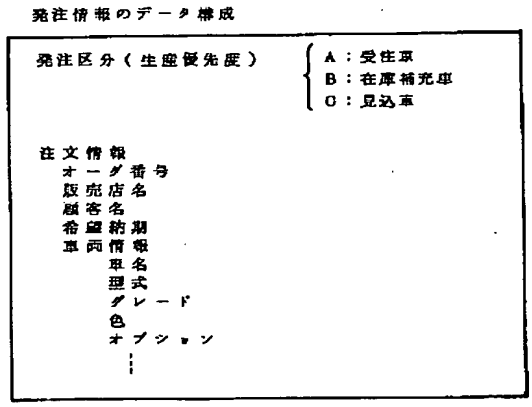
[Drawing 1]



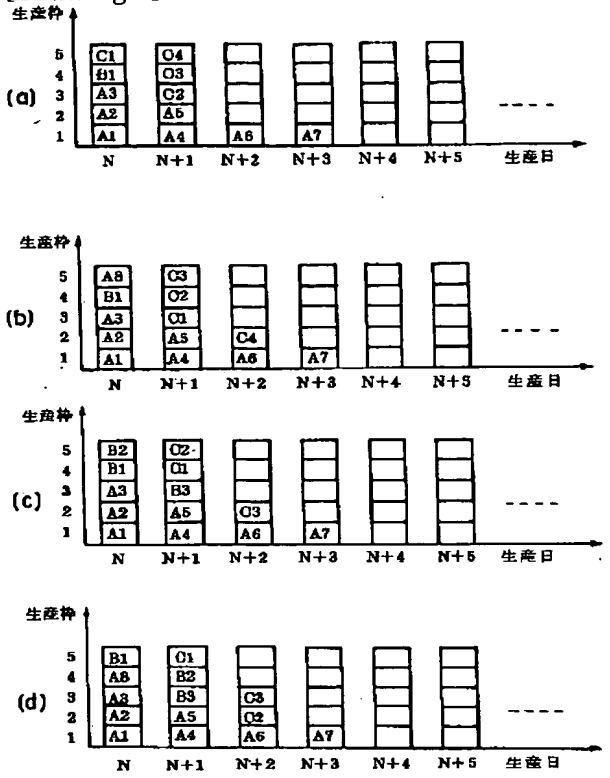
[Drawing 7]



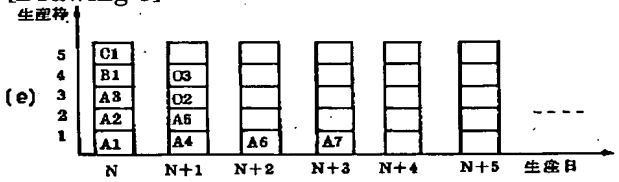
[Drawing 2]

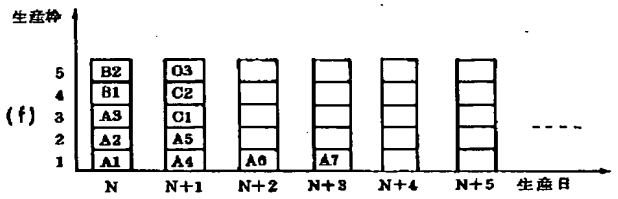


[Drawing 4]



[Drawing 5]



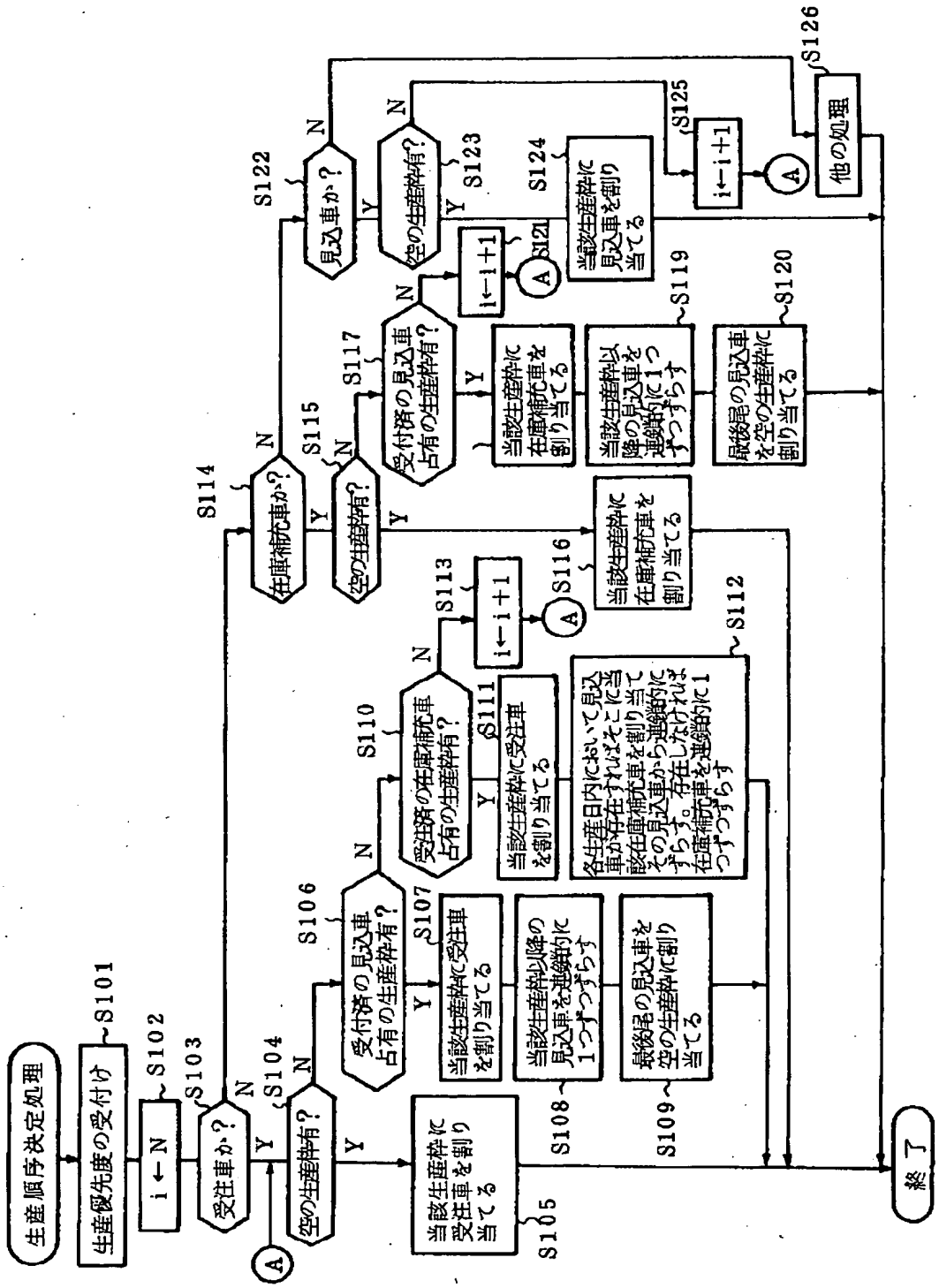


[Drawing 6]

生産順序管理テーブル

生産日	生産順序番号	生産優先度	オーダ番号
N	1	A	X123
N	2	A	X234
N	3	A	Y125
N	4	B	Z345
N	5	B	X345
N+1	1	A	Z567
N+1	2	A	T123
N+1	3	B	V234
⋮	⋮	⋮	⋮
N+m	5		

[Drawing 3]


生産順序決定処理
生産優先度の受付け
S101
i←N
S102
受注車か？
S103
空の生産枠有？
S104
受付済の見込車占有の生産枠有？
S106
当該生産枠に受注車を割り当てる
S107
受注済の在庫補充車占有の生産枠有？
S110
当該生産枠に受注車を割り当てる
S111
各生産日内において見込車が存在すればそこに当該在庫補充車を割り当てその見込車から連鎖的にずらす。存在しなければ在庫補充車を連鎖的に1つずつずらす
S112
i←i+1
S113
A
当該生産枠に在庫補充車を割り当てる
S116
在庫補充車か？
S114
空の生産枠有？
S115
受付済の見込車占有の生産枠有？
S117
当該生産枠に在庫補充車を割り当てる
当該生産枠以降の見込車を連鎖的に1つずつずらす
S119
最後尾の見込車を空の生産枠に割り当てる
S120
i←i+1
S121
A
見込車か？
S122
空の生産枠有？
S123
当該生産枠に見込車を割り当てる
S124
i←i+1
S125
A
他の処理
S126
当該生産枠に受注車を割り当てる
S105
当該生産枠以降の見込車を連鎖的に1つずつずらす
S108
最後尾の見込車を空の生産枠に割り当てる
S109
終了
Y
N

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Ｂ２３Ｑ　41/08		Ｂ２３Ｑ　41/08	Ａ	５Ｂ０４９
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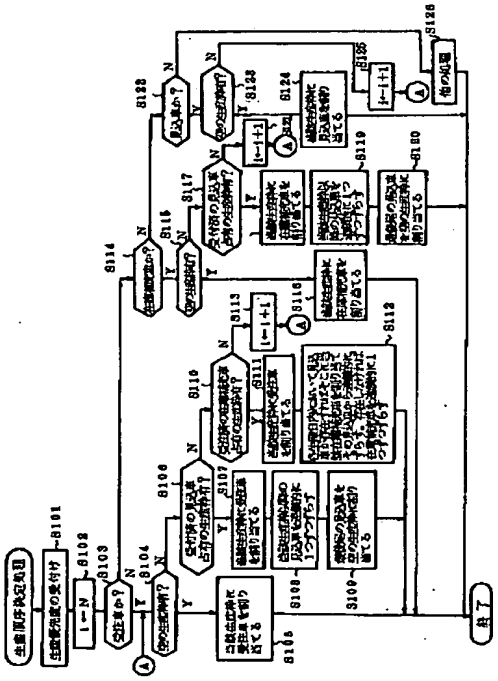
最終頁に続く

(54)【発明の名称】　生産順序管理システム及び生産順序決定方法

(57)【要約】
【課題】　受注した製品を確実により早く顧客に納品する。
【解決手段】　生産優先度の最も高い受注車を割り当てる空の生産枠がない場合、生産枠設定済みの最も生産優先度の低い見込車が存在すればその生産枠に受注車を割り当てる（ステップ１０７）。生産枠を譲った見込車に対して後段の見込車の生産枠に、生産枠を譲った見込車を割り当てるように連鎖的に１つずつ生産枠をずらしていく（ステップ１０８，１０９）。生産枠設定済みの見込車が存在しない場合、生産枠設定済みの次に生産優先度の低い在庫補充車が存在すればその生産枠に受注車を割り当てる（ステップ１１１）。その在庫補充車の生産枠の位置から後段の見込車を探して、存在すればその生産枠に在庫補充車を割り当てる（ステップ１１１）。存在しなければ、同日の在庫補充車を探して連鎖的に１つずつ生産枠をずらしていく（ステップ１１２）。



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【特許請求の範囲】

【請求項１】　受け付けた発注情報に応じて製品の生産を開始する受注時生産方式を採用した生産工場における生産順序の管理を行うシステムにおいて、

発注情報に設定された生産優先度に応じて生産順序を決定する生産順序決定処理手段と、

前記生産順序決定処理手段が決定した製品の生産順序を、各製品の生産優先度とともに保持する生産順序保持手段と、

発注情報を受け付けるとともに、受け付けた発注情報に最優先製品であることを意図する最も高い生産優先度が指定されている場合にその発注情報が顧客からの実際の受注に基づくものであるか否かの検証を行う受注処理手段と、

を有し、

前記生産順序決定処理手段は、受け付けた発注情報が最優先製品に対するものであると前記受注処理手段により確認された場合、既に生産順序が設定されている最優先製品より低い生産優先度の製品の生産順序のところに最優先製品を割り当てることを特徴とする生産順序管理システム。

【請求項２】　前記生産順序決定処理手段は、受け付けた発注情報が最優先製品に対するものであると前記受注処理手段により確認された場合、前記生産順序保持手段に保持されている生産順序の先頭から順番に検索して、最初に見つけた最優先製品より低い生産優先度の製品の生産順序のところに最優先製品を割り当てることを特徴とする請求項１記載の生産順序管理システム。

【請求項３】　前記生産順序決定処理手段は、設定されていた生産順序を他の製品に譲った再割当対象製品を、その譲った生産順序の位置から順番に検索して当該再割当対象製品と同じ生産優先度の製品が存在した場合には、その製品の生産順序のところに当該再割当対象製品を割り当てることを特徴とする請求項１記載の生産順序管理システム。

【請求項４】　前記生産順序決定処理手段は、設定されていた生産順序を他の製品に譲った再割当対象製品を、その譲った生産順序の位置から順番に検索して当該再割当対象製品より低い生産優先度の製品が存在した場合には、その製品の生産順序のところに当該再割当対象製品を割り当てることを特徴とする請求項１記載の生産順序管理システム。

【請求項５】　前記受注処理手段は、発注情報に顧客情報が含まれている場合に発注情報が顧客からの実際の受注に基づくものであると判定することを特徴とする請求項１記載の生産順序管理システム。

【請求項６】　顧客からの実際の受注に基づく最優先製品に設定する第１優先度、実際の受注はないものの販売実績から受注される可能性の高い製品に設定する第１優先度より低い第２優先度及び実際の受注はなくかつ受注

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される可能性も高くはないが注文されるであろうという見込みのある製品に設定する第１及び第２優先度より低い第３優先度を生産優先度として設定可能であることを特徴とする請求項１記載の生産順序管理システム。

【請求項７】　顧客からの受注内容に従って発注情報を生成するとともに最も高い生産優先度を設定してからその発注情報を送ることで発注を行う発注処理手段を有することを特徴とする請求項１記載の生産順序管理システム。

【請求項８】　受け付けた発注情報に応じて製品の生産を開始する受注時生産方式を採用した生産工場における生産順序の管理を行うシステムにおいて、

受け付けた発注情報に最優先製品であることを意図する最も高い生産優先度が指定されている場合に、既に生産順序が設定されている最優先製品より低い生産優先度の製品の生産順序のところに当該最優先製品を割り当てることを特徴とする生産順序決定方法。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は生産順序管理システム、特に受注時生産方式と計画生産方式とを併用する製造ラインにおいて優先度に応じて生産順序を操作することによって受注品の早期納品を可能とする改良されたシステムに関する。

【０００２】

【従来の技術】従来から、自動車の生産工場などでは、週、月などの予め決められたスパンにおいて生産計画を立案し、その生産計画に基づき稼働日毎の生産枠（生産台数）を決定し、その生産枠内において製造すべき車両を割り当てて生産している。このような生産工場では、生産効率拡大化等のために多品種にわたる製品を同一の製造ラインにおいて製造しているが、通常、販売店からの発注情報に応じて製品である車両の製造を開始する受注時生産方式と、実際の受注の有無に関係なく販売戦略等の観点からある程度の受注を見込んで車両の製造を行う計画生産方式とを併用している。このうち、受注時生産方式における処理の流れを簡単に説明すると、販売店では、車名、型式、ボディ色、オプション等注文したい車両に関する車両情報に販売店名等の情報を設定した発注情報を生成して生産工場に送る。生産工場では、送られてきた発注情報を受注情報として受け付け順次蓄積する。そして、予め決められたスパン単位に、蓄積しておいた未処理の受注情報に対して生産枠を割り当てる。例えば、１週間分の受注情報を蓄積しておき、１週間分をまとめて生産枠を割り当てる。従来では、生産枠にいったん車両が割り当てられ、あるスパン内における生産枠に空きがなくなると、そのスパンにおける注文は締め切って、その次のスパン内における生産枠に割り当てていくことになる。受注情報に対する生産枠が見つかると、確保できた生産枠の稼働日から得られる納車可能な日

（納車予定日）を販売店に返す。そして、当該車両は、確保した生産枠において車両情報に従い製造され、納車予定日に発注した販売店に納品されることになる。

【０００３】ところで、受注時生産方式においては、顧客からの受注があった場合にいかに早くその顧客に車両を届けるかということがユーザ満足度や製造、販売メーカに対する信頼度の向上等の観点から極めて重要な課題である。そこで、従来では、以下のようにして早期に顧客に車両を届けることができるようにしている。

【０００４】まず、販売店が生産工場へ注文するレベルとしては、受注車、在庫補充車及び見込車の３つの大別できる。「受注車」というのは、顧客との間で契約が結ばれ実際に注文を受けた際に発注をする車両をいう。「在庫補充車」というのは、受注車ではないものの販売店の受注動向（実績）からすぐに売れるであろうとの予測に従い予め在庫として抱えることを前提として発注を決意した車両をいう。「見込車」というのは、実際に売れるかどうかの不確定要素が在庫補充車と比較して大きく、販売利益拡大、販売総量の拡大のために全国の市場動向から売れるであろうという見込み、期待を持って仕入れ発注をする車両をいう。販売店では、生産工場へ受注車の発注を行う際に、優先して製造してもらいたい旨を示す優先度情報をその受注車の発注情報に付加してから注文を行う。生産工場では、販売店からの発注情報を受注情報として受け付けると、その受注情報に優先度情報が付加されていれば、その受注情報に対して空きの生産枠の中からより早い時期の生産枠を確保する。このようにして、受注車の製造を優先させて早期納車を実現している。

【０００５】ところで、受注時生産方式と計画生産方式とを併用し、早期納品の実現のためのシステム管理装置が特開平６－４４２５９号公報に開示されている。この先行技術では、製造ライン上に滞留している納品先未定の製品の中から受注内容（仕様）に一致する製品を検索し、一致する製品が存在すれば、その滞留している納品先未定の製品を受注製品に振り替えるようにして納期を早めるようにしている。

【０００６】

【発明が解決しようとする課題】しかしながら、販売店側の設定行為に基づき優先度情報の付加が行われることになるため、実際の受注の有無に関係なく早期納車の実現のために受注車以外にも優先度情報を私意的に付加することは可能であるが、従来においては、生産順序を決定する際にその優先度情報の信憑性についての検証機能を設けていなかったので、仮に受注車以外の発注情報に優先度情報が付加されたとしてもその優先度情報に従い生産順序が優先されてしまう。このため、実際の受注車の早期納車の実現の弊害となるおそれがあった。

【０００７】また、上記先行技術のように同一内容（仕様）の納品先未定の製品を受注製品に振り替えるようにすることにより、納品先未定の製品が滞留されていれば受注製品の早期納品は実現可能であるが、同一内容の納品先未定の製品が滞留されていなければ、結局のところ受注製品に対する納期は受注製品でない製品に対する納期と同じになってしまう。計画生産より受注生産の占める割合が大きく納品先未定のものの占める割合が小さくなるような製品や、上記説明した自動車のように車種、型式、色、オプション等多種の条件により仕様が決定し、同一仕様の製品が稀少となる製品を製造する場合は、同一仕様の納品先未定の製品が見つかる可能性が低く、システム全体として受注製品の早期納品は困難となってしまう。

【０００８】本発明は以上のような問題を解決するためになされたものであり、その目的は、受注した製品を確実により早く顧客に納品することができる生産順序管理システム及び生産順序決定方法を提供することにある。

【０００９】

【課題を解決するための手段】以上のような目的を達成するために、本発明に係る生産順序管理システムは、受け付けた発注情報に応じて製品の生産を開始する受注時生産方式を採用した生産工場における生産順序の管理を行うシステムにおいて、発注情報に設定された生産優先度に応じて生産順序を決定する生産順序決定処理手段と、前記生産順序決定処理手段が決定した製品の生産順序を、各製品の生産優先度とともに保持する生産順序保持手段と、発注情報を受け付けるとともに、受け付けた発注情報に最優先製品であることを意図する最も高い生産優先度が指定されている場合にその発注情報が顧客からの実際の受注に基づくものであるか否かの検証を行う受注処理手段とを有し、前記生産順序決定処理手段は、受け付けた発注情報が最優先製品に対するものであると前記受注処理手段により確認された場合、既に生産順序が設定されている最優先製品より低い生産優先度の製品の生産順序のところに最優先製品を割り当てることを特徴とする。これにより、生産枠の有無に関係なく最優先製品を優先的に生産することができる。

【００１０】また、前記生産順序決定処理手段は、受け付けた発注情報が最優先製品に対するものであると前記受注処理手段により確認された場合、前記生産順序保持手段に保持されている生産順序の先頭から順番に検索して、最初に見つけた最優先製品より低い生産優先度の製品の生産順序のところに最優先製品を割り当てることを特徴とする。

【００１１】また、前記生産順序決定処理手段は、設定されていた生産順序を他の製品に譲った再割当対象製品を、その譲った生産順序の位置から順番に検索して当該再割当対象製品と同じ生産優先度の製品が存在した場合には、その製品の生産順序のところに当該再割当対象製品を割り当てることを特徴とする。これを繰り返し行うことで、同一生産優先度の製品を連鎖的に１つずつずら

して再割当がされていくので、後から受注された製品が先に生産されることはない。

【００１２】また、前記生産順序決定処理手段は、設定されていた生産順序を他の製品に譲った再割当対象製品を、その譲った生産順序の位置から順番に検索して当該再割当対象製品より低い生産優先度の製品が存在した場合には、その製品の生産順序のところに当該再割当対象製品を割り当てることを特徴とする。これにより、生産優先度の高い製品を優先的に生産することができる。

【００１３】また、前記受注処理手段は、発注情報に顧客情報が含まれている場合に発注情報が顧客からの実際の受注に基づくものであると判定することを特徴とする。

【００１４】また、顧客からの実際の受注に基づく最優先製品に設定する第１優先度、実際の受注はないものの販売実績から受注される可能性の高い製品に設定する第１優先度より低い第２優先度及び実際の受注はなくかつ受注される可能性も高くはないが注文されるであろうという見込みのある製品に設定する第１及び第２優先度より低い第３優先度を生産優先度として設定可能であることを特徴とする。

【００１５】更に、顧客からの受注内容に従って発注情報を生成するとともに最も高い生産優先度を設定してからその発注情報を送ることで発注を行う発注処理手段を有することを特徴とする。

【００１６】また、本発明に係る生産順序決定方法は、受け付けた発注情報に応じて製品の生産を開始する受注時生産方式を採用した生産工場における生産順序の管理を行うシステムにおいて、受け付けた発注情報に最優先製品であることを意図する最も高い生産優先度が指定されている場合に、既に生産順序が設定されている最優先製品より低い生産優先度の製品の生産順序のところに当該最優先製品を割り当てることを特徴とする。

【００１７】

【発明の実施の形態】以下、図面に基づいて、本発明の好適な実施の形態について説明する。

【００１８】図１は、本発明に係る生産順序管理システムの一実施の形態を示した機能ブロック構成図である。本実施の形態では、顧客に販売する製品が自動車であり、その車両の製造ラインにおける生産順序の決定を行う場合を例にして説明する。そのため、図１には、自動車の販売業務を行う販売店１０と、販売店１０からの注文に応じて車両を製造し納品する生産工場２０とが示されている。現実には、顧客の受注管理や部品調達等の業務処理が発生し、そのための業務機関が必要となるが、本実施の形態においては特に必要ないので説明を省略する。また、通常は複数の販売店１０が設置されているが、どの販売店も同じ処理を行うため便宜上、１店舗のみを図示する。更に、販売店１０と生産工場２０との通信機構についても本実施の形態の特徴でないので省略する。

【００１９】販売店１０には、顧客からの注文を受け付けて注文情報１１を生成する注文受付処理部１２と、発注処理すなわち注文情報に発注区分（生産優先度）を付加することで生成した発注情報を送る発注処理部１３とが設けられている。発注処理部１３により生成された発注情報は、発注情報データベース（ＤＢ）１４で保持管理される。

【００２０】生産工場２０は、受注時生産方式と計画生産方式とを併用した図示しない製造ラインで車両を製造している。生産工場２０には、販売店１０からの発注情報を受け付けることによってそれを受注情報２１として保持する受注処理部２２と、受注情報に設定されている発注区分（生産優先度）に応じて生産順序を決定する生産順序決定処理部２３とが設けられている。生産順序決定処理部２３は、決定した生産順序を生産受付情報データベース（ＤＢ）２４に蓄積する。また、生産順序管理テーブル２５を用いて生産順序を決定する。なお、本実施の形態において扱うデータに関しては、処理内容を説明するときに併せて説明する。

【００２１】以上の構成において販売店１０から生産工場２０へ発注を行い、その発注に応じて納車されるまでの処理の概略的な流れは、次の通りである。すなわち、販売店１０において顧客の注文を取り付けると、その受注内容に従い発注情報を生成して生産工場２０に送る。生産工場２０では、送られてきた発注情報に基づき当該車両の生産枠を確保する。そして、確保できた生産枠の稼働日から求められる車両の納期（納車予定日）を回答納期として販売店１０に返す。販売店１０は、その回答納期を注文した顧客に知らせる。そして、注文された車両は、確保した生産枠において発注情報に含まれている車両情報に基づき生成された生産指示に従い製造され、販売店１０に回答納期までに納品されることになる。以下、生産工場２０において生産順序が決定されるまでの処理の詳細について説明する。最初に、販売店１０において発注を行う際の処理についてから説明する。

【００２２】図２は、本実施の形態における発注情報のデータ構成を示した図である。発注情報は、発注区分と注文情報とで構成される。注文情報には、注文を管理するために全販売店において独自に付けられるオーダ番号、生産工場２０に発注を行う販売店名、注文した顧客を特定するための顧客情報としての顧客名、希望納期及び製造を希望する車両の仕様等を明示した車両情報が含まれている。発注区分には、販売店が生産工場へ注文するレベルを指定する。販売店１０が生産工場２０に対して発注を行うのは、顧客との間で契約が結ばれ実際に注文を受けた場合、すぐに売れることをみこして在庫車を補充しておきたい場合、実際に売れるかどうかは不確かではあるものの市場動向から売れるであろうという見込みで仕入れておきたい場合である。すなわち、前述した

受注車、在庫補充車及び見込車の発注である。従って、発注区分には、そのレベルの別を指定する。本実施の形態では、受注車を“A”、在庫補充車を“B”、見込車を“C”と表すことにする。

【００２３】販売店１０において在庫補充車又は見込車を注文する場合には、各項目にデータを設定して図２に示した注文情報を生成する。但し、この場合、顧客がまだついていないので顧客名の設定はできない。そして、更に在庫補充車又は見込車を示す“B”又は“C”を発注区分に設定して発注情報を生成する。一方、顧客からの注文を受けた場合には、顧客からの受注内容に応じて車両情報を設定し、また、必要に応じて他の情報を設定して注文情報を生成する。特に、この場合は顧客名を設定することができる。そして、更に受注車を示す“A”を発注区分に設定して発注情報を生成する。その後、生成した発注情報を生産工場２０に送ることで発注処理は完了し、生産工場２０からの回答納期を待つ。

【００２４】本実施の形態では、以上のように発注情報に発注する車両のレベルを指定した発注区分を付加するようにしたことを特徴としている。この発注区分に指定する車両のレベルは、製造される優先度のレベルであるということもできる。すなわち、受注車は、受注を実際に受けたので可能な限り最優先で製造し早期納車を希望する車両であり、最も高い優先度で製造されるべき最優先製品であるということができる。在庫補充車は、実際に注文はされていないので受注車と同等に扱う必要はないが、すぐに受注される可能性があることから受注車より低いが相対的に高い優先度で製造されるべき製品であるということができる。見込車は、実際の受注はなくかつ受注される可能性が高いとは必ずしもいえない製品なので、受注車及び在庫補充車より低い優先度で製造されるべき製品であるということができる。このように、本実施の形態においては、注文された車両の生産順序を生産工場２０において決定する指標として、車両の製造される優先度を発注する側において注文情報に付加して送るようにした。この発注区分に指定する車両の製造される優先度を本願では「生産優先度」と称することにする。

【００２５】生産工場２０においては、各販売店１０からの発注情報を受け付けると、その生産優先度に基づき生産順序を決定するわけだが、この処理について図３に示したフローチャート及び図４，５に示した模式図を用いて説明する。まず、図４，５の見方について説明する。

【００２６】本実施の形態では、生産日における生産枠を便宜上５台分としている。すなわち、この生産工場２０における製造ラインでは、各生産日において５台ずつの車両を製造することができることを示している。図４において横軸は生産日、縦軸は生産枠である。生産日は、通常は月日で表すが、ここでは便宜的に生産順序の決定／変更可能な初日をＮ日とし、その後の生産日を初日からの日数（Ｎ＋１，Ｎ＋２，・・・，Ｎ＋ｍ）で表すことにする。矩形で示された生産枠がブランクの場合は、その生産枠に製造すべき車両がまだ割り当てられていないことを意味する。ブランクでない生産枠において“A”で始める文字列は生産優先度“A”の受注車が割り当てられていることを意味する。“A”に続く数字は他の受注車と識別するために独自に付けた。生産優先度“B”，“C”についても同様である。この英字で始まる文字列は、説明する際に用いるものであり、注文情報に含まれているオーダ番号とは関係ない。

【００２７】また、本実施の形態では、生産順序管理テーブル２５を利用して生産順序を決定する。図６にこの生産順序管理テーブル２５の構成例を示した。生産順序管理テーブル２５は、メモリに展開されており、既に決定されている生産順序が保持されている。生産日は図４における生産日と同じであり、生産順序番号は各生産日における生産枠の並び順を示している。生産日と生産順序番号で生産枠を一意と特定することができる。生産優先度には、各生産枠に割り当てられた車両の生産優先度が設定される。オーダ番号には、各生産枠に割り当てられた車両の注文情報に設定されているオーダ番号である。このオーダ番号により受注情報２１及び生産受付情報データベース２４との関連付けができる。以下、生産工場１０における処理を説明する。

【００２８】受注処理部２２は、各販売店１０からの発注情報を受け付けると、それを受注情報として受注情報データベース２１に蓄積する。つまり、発注情報と受注情報の内容は一致している。ここで、受注処理部２２は、受け付けた注文情報に付加されている生産優先度が受注車であることを示す発注区分が指定されている場合、顧客名が指定されているかどうかをチェックする。顧客名が指定されていれば、受け付けた発注情報が顧客からの実際の受注に基づくものであると判定することができる。仮に、顧客名が指定されていなければ、発注をした販売店１０が納車時期を早めようと発注区分に不当な設定をしたということになる。このように、本実施の形態によれば、発注区分（生産優先度）の信憑性についての検証機能を設けていたので、このような不当な注文を未然に防止することができる。

【００２９】生産順序決定処理部２３は、注文情報に付加されている生産優先度を受け付けると（ステップ１０１）、その生産優先度の内容によって以下のような処理を行う。基本的には発注情報の受付順に処理する。まず、生産優先度が受注車を示す“A”である場合についてから説明する（ステップ１０３）。

【００３０】生産順序決定処理部２３は、生産順序の先頭すなわち生産日の初日（Ｎ日）において１番目から５番目の生産枠まで順番に検索して空の生産枠を探す（ステップ１０２，１０４）。これは、生産順序管理テーブ

ル２５を先頭から順番に検索し、生産優先度の設定の有無によって判断することができる。空の生産枠が存在すれば、そこに当該受注車を割り当てる（ステップ１０５）。

【００３１】生産日の初日（Ｎ日）において空の生産枠が存在しない場合（ステップ１０４）、既に見込車により当該Ｎ日の生産枠が占有されているかをチェックする（ステップ１０６）。例えば、図４（ａ）に示したようにＮ日の５番目の生産枠に見込車“Ｃ１”が割り当てられている場合、その生産枠に当該受注車“Ａ８”を割り当てる（ステップ１０７）。当該生産枠を明け渡し生産順序を譲った見込車“Ｃ１”には、生産枠の再割当をしなければならないが、本実施の形態では、次のようにして再割当を行う。

【００３２】まず、譲った生産枠の位置（Ｎ日５番目）から順番に検索して同じ生産優先度の見込車が占有する生産枠を探す。なお、この場合は、生産日を越えて探す。該当する生産枠が存在すれば、そこに見込車“Ｃ１”を割り当てる。図４（ａ）に示した例によると、Ｎ＋１日の３番目の生産枠に見込車“Ｃ２”が割り当てられているので、ここに見込車“Ｃ１”を割り当てる。今度は、見込車“Ｃ１”に生産枠を譲った見込車“Ｃ２”のために生産枠の再割当をしなければならないが、上記と同様にして譲った生産枠の位置（Ｎ＋１日３番目）から順番に検索して同じ生産優先度の見込車が占有する生産枠を探す。図４（ａ）に示した例によると、Ｎ＋１日の４番目の生産枠に見込車“Ｃ３”が割り当てられているので、ここに見込車“Ｃ２”を割り当てる。このように、受注車に譲った生産枠から順番に見込車を１つずつ連鎖的にずらしていく（ステップ１０８）。そして、最後尾の見込車（図４（ａ）に示した例ではＮ＋１日５番目の“Ｃ４”）においては、空の生産枠（図４（ａ）に示した例ではＮ＋２日２番目）を割り当てる（ステップ１０９）。図４（ａ）の生産順序において実行した処理の結果、新たに決定した生産順序を図４（ｂ）に示す。

【００３３】生産日の初日（Ｎ日）において空の生産枠が存在せずかつ見込車により占有されている生産枠も存在しない場合には、既に在庫補充車により当該Ｎ日の生産枠が占有されているかをチェックする（ステップ１１０）。例えば、図４（ｃ）に示したようにＮ日の４番目の生産枠に在庫補充車“Ｂ１”が割り当てられている場合、その生産枠に当該受注車“Ａ８”を割り当てる（ステップ１１１）。当該生産枠を明け渡し生産順序を譲った在庫補充車“Ｂ１”には、生産枠の再割当をしなければならないが、本実施の形態では、次のようにして再割当を行う（ステップ１１２）。

【００３４】すなわち、譲った生産枠の位置（Ｎ日４番目）から順番に同日内において低い生産優先度の見込車が占有する生産枠を探す。存在すれば、そこに在庫補充車“Ｂ１”を割り当てる。その後の見込車の再割当は、ステップ１０８，１０９のように見込車のレベルにおいて再割当を行う。該当する見込車が存在しなければ、同じ生産優先度の在庫補充車が占有する生産枠を探す。該当する生産枠が存在すれば、そこに在庫補充車“Ｂ１”を割り当てる。図４（ｃ）に示した例によると、Ｎ日の５番目の生産枠に在庫補充車“Ｂ２”が割り当てられているので、ここに在庫補充車“Ｂ１”を割り当てる。今度は、当該生産枠を譲った在庫補充車“Ｂ２”に生産枠の再割当をしなければならないが、上記と同様にして譲った生産枠の位置（Ｎ日５番目）から順番に検索して同日内において低い生産優先度の見込車が占有する生産枠を探す。存在すれば、そこに在庫補充車“Ｂ２”を割り当てる。その後の見込車の再割当は、ステップ１０８，１０９のように見込車のレベルにおいて再割当を行う。該当する見込車が存在しなければ、同じ生産優先度の在庫補充車が占有する生産枠を探す。図４（ｃ）に示した例によると、該当する見込車も在庫補充車も存在しないので、処理対象日を翌日のＮ＋１日とする。そして、翌日内において上記と同様の処理を行う。すなわち、最初に見込車により占有されている生産枠を探す。存在すれば、そこに在庫補充車“Ｂ２”を割り当てる。図４（ｃ）に示した例によると、Ｎ＋１日の４番目の生産枠に見込車“Ｃ１”が割り当てられているので、ここに在庫補充車“Ｂ２”を割り当てる。これにより、今度は、当該生産枠を譲った見込車“Ｃ１”に生産枠の再割当をしなければならないが、この見込車“Ｃ１”から最後尾の見込車までの再割当は、ステップ１０８，１０９と同様にして行う。仮に、Ｎ＋１日内において見込車が存在しなければ、同じ生産優先度の在庫補充車が占有する生産枠を探し、存在すれば、その生産枠に当該在庫補充車を割り当てる。Ｎ＋１日における処理も上記説明したＮ日と同じなので、前述した処理を繰り返すことになる。

【００３５】更に、生産日の初日（Ｎ日）において空の生産枠が存在せずかつ見込車及び在庫補充車により占有されている生産枠も存在しない場合、すなわちＮ日の全ての生産枠が受注車によってすでに占有されている場合は、処理対象日を翌日（Ｎ＋１日）に更新して上記説明した処理を行う（ステップ１１３）。

【００３６】以上の処理を繰り返し行うことで受注車の生産順序を決定することができる。受注車並びに受注車若しくは在庫補充車に生産枠を譲った見込車又は在庫補充車も含めて車両全体における生産順序が決定されると、新たに決定した生産順序に従い生産順序管理テーブル２５に生産優先度とオーダ番号をそれぞれ設定する。そして、生産順序管理テーブル２５及び受注情報２１の内容に従い生産受付情報データベース２４を更新する。生産受付情報データベース２４に格納されるデータ構成の例を図７に示す。

【００３７】本実施の形態によれば、受注車を見込車及び在庫補充車に対して常に優先させた生産順序とするこ

とができる。受注車は、既に割り当てられた見込車又は在庫補充車が存在する場合はその車両から生産枠を譲ってもらうことになるが、在庫補充車が占有していた生産枠を割り当てる場合、この場合にも見込車と在庫補充車との間では在庫補充車の方を優先させている。また、本実施の形態においては、生産枠を受注車に譲った見込車又は在庫補充車に対しては、空の生産枠を無条件に割り当てるのではなく、割り当てられていた生産枠から同じレベルの車両を１つずつずらしていくことによって、後に受け付けた同一レベルの車両が先の生産日に製造されることを防止することができる。これにより、既に設定されていた生産枠を譲ったとしても同一レベルの車両の間では注文の受付順を遵守できる。また、既設定の生産枠を１つずつ連鎖的にずらしていくので、大幅な生産日の遅延が生じにくく、更に実際に注文を受けていない車両に対する生産枠の再割当なので回答納期を報告した後でも重大な問題になることはほとんどない。

【００３８】なお、生産枠再割当後の状態を示した図４（ｂ）では、受注車“Ａ８”より前に在庫補充車“Ｂ１”が製造される。これは、同日に見込車が存在したためである。同日であれば、数台分の先後は、特に問題ないと考えられる。厳密に受注車“Ａ８”を全ての在庫補充車に優先させて製造したいのならば、生産枠が決定した後に、生産枠の再割当対象となった生産日の中で並び替えをすればよい。また、図４（ｄ）では、在庫補充車“Ｂ２”と“Ｂ３”の順番が逆である。これは、設定済みの在庫補充車を優先し、見込車から先に生産枠の確保の候補としたからである。厳密に並び替えたければ、前述したように該当する生産日の中で並び替えをすればよい。

【００３９】次に、生産優先度が在庫補充車を示す“Ｂ”である場合について説明する（ステップ１０３，１１４）。

【００４０】生産順序決定処理部２３は、生産順序の先頭すなわち生産日の初日（Ｎ日）において１番目から５番目の生産枠まで順番に検索して空の生産枠を探す（ステップ１１５）。空の生産枠が存在すれば、そこに当該在庫補充車を割り当てる（ステップ１１６）。

【００４１】生産日の初日（Ｎ日）において空の生産枠が存在しない場合（ステップ１１５）、既に見込車により当該Ｎ日の生産枠が占有されているかをチェックする（ステップ１１７）。例えば、図５（ｅ）に示したようにＮ日の５番目の生産枠に見込車“Ｃ１”が割り当てられている場合、その生産枠に当該在庫補充車“Ｂ２”を割り当てる（ステップ１１８）。当該生産枠を明け渡し生産順序を譲った見込車“Ｃ１”には、生産枠の再割当をしなければならないが、見込車“Ｃ１”の再割当に伴う連鎖的な再割当（ステップ１１９，１２０）は、ステップ１０８，１０９と同様なので説明を省略する。図５（ｅ）の生産順序において実行した処理の結果、新たに決定した生産順序を図５（ｆ）に示す。

【００４２】生産日の初日（Ｎ日）において空の生産枠が存在せずかつ見込車により占有されている生産枠も存在しない場合、すなわちＮ日の全ての生産枠が受注車又は在庫補充車によってすでに占有されている場合は、処理対象日を翌日（Ｎ＋１日）に更新して上記説明した処理を行う（ステップ１２１）。この結果、生産枠が割り当てられている見込車が存在する場合には、在庫補充車を見込車に優先させて生産枠を割り当てることができる。

【００４３】次に、生産優先度が見込車を示す“Ｃ”である場合について説明する（ステップ１０３，１１４，１２２）。

【００４４】生産順序決定処理部２３は、生産順序の先頭すなわち生産日の初日（Ｎ日）において１番目から５番目の生産枠まで順番に検索して空の生産枠を探す（ステップ１２３）。空の生産枠が存在すれば、そこに当該見込車を割り当てる（ステップ１２４）。生産日の初日（Ｎ日）において空の生産枠が存在しない場合は、処理対象日を翌日（Ｎ＋１日）に更新して上記説明した処理を行う（ステップ１２５）。この結果、見込車の生産枠への割当を行うことができる。

【００４５】更に、生産優先度が受注車、在庫補充車及び見込車を示す“Ａ”，“Ｂ”及び“Ｃ”でない場合には、所定の処理を行う（ステップ１２６）。例えば、受注時生産方式と計画生産方式とを併用している本実施の形態においては、生産優先度が“Ａ”，“Ｂ”，“Ｃ”のいずれでもない場合を受注により製造を行う車両でなく計画生産に従った車両と判断して空の生産枠を当該車両に割り当てる。もし、計画生産に従った車両に対して“Ｄ”などの生産優先度を設定するようにした場合や受注時生産方式のみを採用しているとしたならば、この場合はエラー処理を実行することになる。

【００４６】以上のようにして、販売店１０からの注文に応じて生産日が決定すると、回答納期を販売店１０に報告することになる。

【００４７】本実施の形態によれば、受注車に対しては空の生産枠がなくても生産優先度の低い見込車又は在庫補充車製品に既に割り当てている生産枠のところにその受注車を割り当てて優先的に製造するようにしたので、受注車を確実により早く顧客に納品することができる。

【００４８】なお、本実施の形態における生産順序の決定方法に従えば、生産順序は受注車が優先的に割り当てられていくことになるため、図４に示したように見込車又は在庫補充車が受注車“Ａ６”，“Ａ７”より前に割り当てられることはない。従って、図４に示した生産順序は例である。

【００４９】上述した本実施の形態では、以上のような構成としたが、これに限られたものではなく種々の変更を加えることができる。例えば、本実施の形態では、生

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産工場２０に複数の製造ラインが存在するのであれば、その情報も考慮して生産順序の決定を行うことになる。また、本実施の形態では、受注時生産方式と計画生産方式とを併用したが、受注時生産方式のみでも適用可能である。更に、システム全体を販売拠点と生産拠点とを分離した構成としたが、一体でもよい。

【００５０】また、本実施の形態では、生産工場２０に注文される車両全てが同等に生産枠の再割当の候補としている。従って、ある販売店１０においては、他の販売店１０からの受注車の注文により在庫補充車又は見込車の納車予定日が繰り下がることになる。もし、他の販売店１０への納車予定日に影響を与えないようにしたければ、販売店コードなどを生産順序の決定の際の条件に付加するなどしてもよい。

【００５１】また、本実施の形態では、処理の高速化を図るために生産順序に関するデータをメモリに展開して生産順序管理テーブル２５を生産順序保持手段として設けるようにしたが、これに設定されているデータは、生産受付情報データベース２４に全て含まれている。従って、生産受付情報データベース２４を生産順序保持手段として使用するのであれば、生産順序管理テーブル２５を別途設けなくてもよい。

【００５２】また、発注情報内の発注区分をそのまま生産優先度としたが、別個に設定できるようにしてもよい。

【００５３】更に、本実施の形態では、製品として自動車の例にして説明したが、受注時生産方式により製造するものであれば、製品の種類にとらわれない。そして、発注のレベルも製品の種類に応じて２つであったり、４つ以上であったりしてもよい。

【００５４】

【発明の効果】本発明によれば、注文された製品を最も高い生産優先度である最優先製品とし、その最優先製品より生産優先度の低い製品に既に割り当てている生産順序のところにその最優先製品を割り当てて優先的に製造するようにしたので、受注した製品を確実により早く顧客に納品することができる。

【００５５】また、発注情報に付加された生産優先度の

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信憑性についての検証機能を設けていたので、不当に納品を早めようとするような発注を未然に防止することができる。

【００５６】また、設定されていた生産順序を他の製品に譲った再割当対象製品を、その譲った生産順序の位置から順番に検索して低い生産優先度の製品の生産順序のところにその再割当対象製品を割り当てるようにしたので、生産優先度に応じた生産順序とすることができる。

【００５７】また、設定されていた生産順序を他の製品に譲った再割当対象製品を、その譲った生産順序の位置から順番に検索して同じ生産優先度の製品の生産順序のところにその再割当対象製品を割り当てるようにした。つまり、既設定の生産順序を連鎖的にずらしていくようにしたので、同じ生産優先度の製品の間では注文の受付順を遵守することができる。

【図面の簡単な説明】

【図１】　本発明に係る生産順序管理システムの一実施の形態を示した機能ブロック構成図である。

【図２】　本実施の形態における発注情報のデータ構成を示した図である。

【図３】　本実施の形態における生産順序決定処理を示したフローチャートである。

【図４】　本実施の形態における生産順序決定処理を説明するための模式図である。

【図５】　本実施の形態における生産順序決定処理を説明するための模式図である。

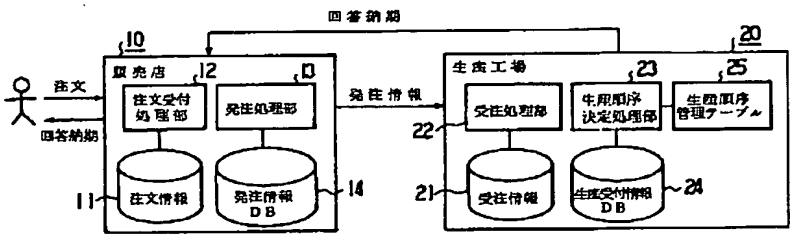
【図６】　本実施の形態における生産順序管理テーブルの構成例を示した図である。

【図７】　本実施の形態における生産受付情報データベースのデータ構成例を示した図である。

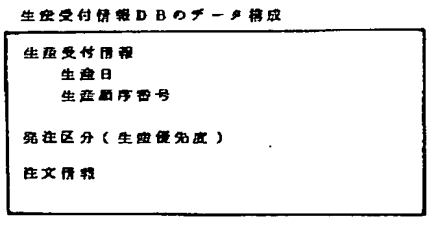
【符号の説明】

１０　販売店、１１　注文情報、１２　注文受付処理部、１３　発注処理部、１４　発注情報データベース（ＤＢ）、２０　生産工場、２１　受注情報、２２受注処理部、２３　生産順序決定処理部、２４　生産受付情報データベース（ＤＢ）、２５　生産順序管理テーブル。

【図１】

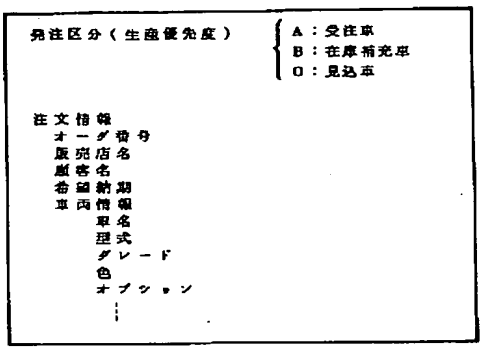


【図７】

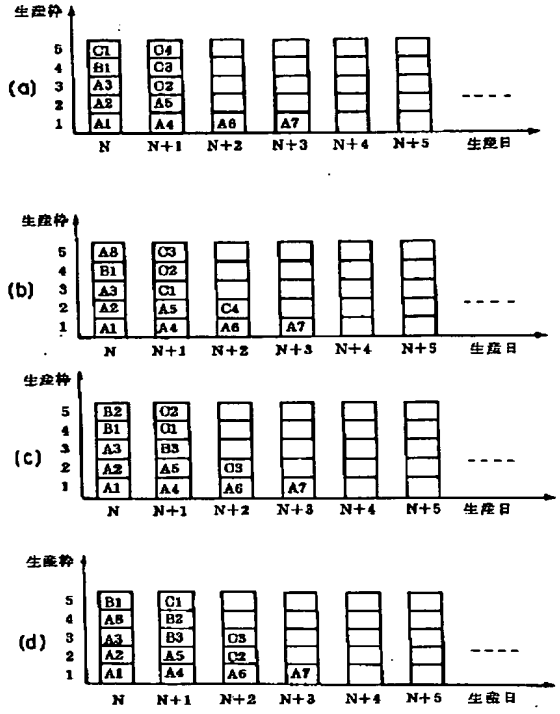


【図２】

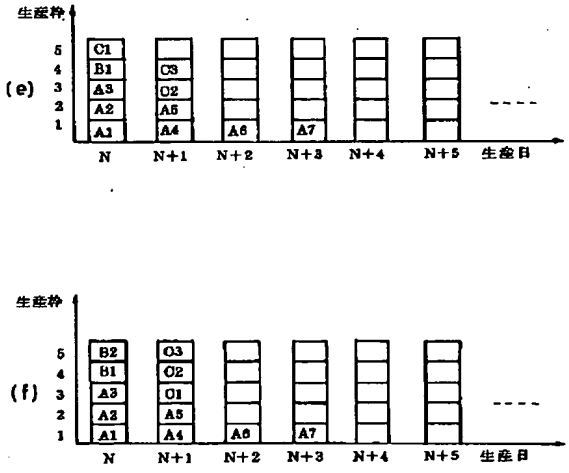
発注信号のデータ構成



【図４】



【図５】

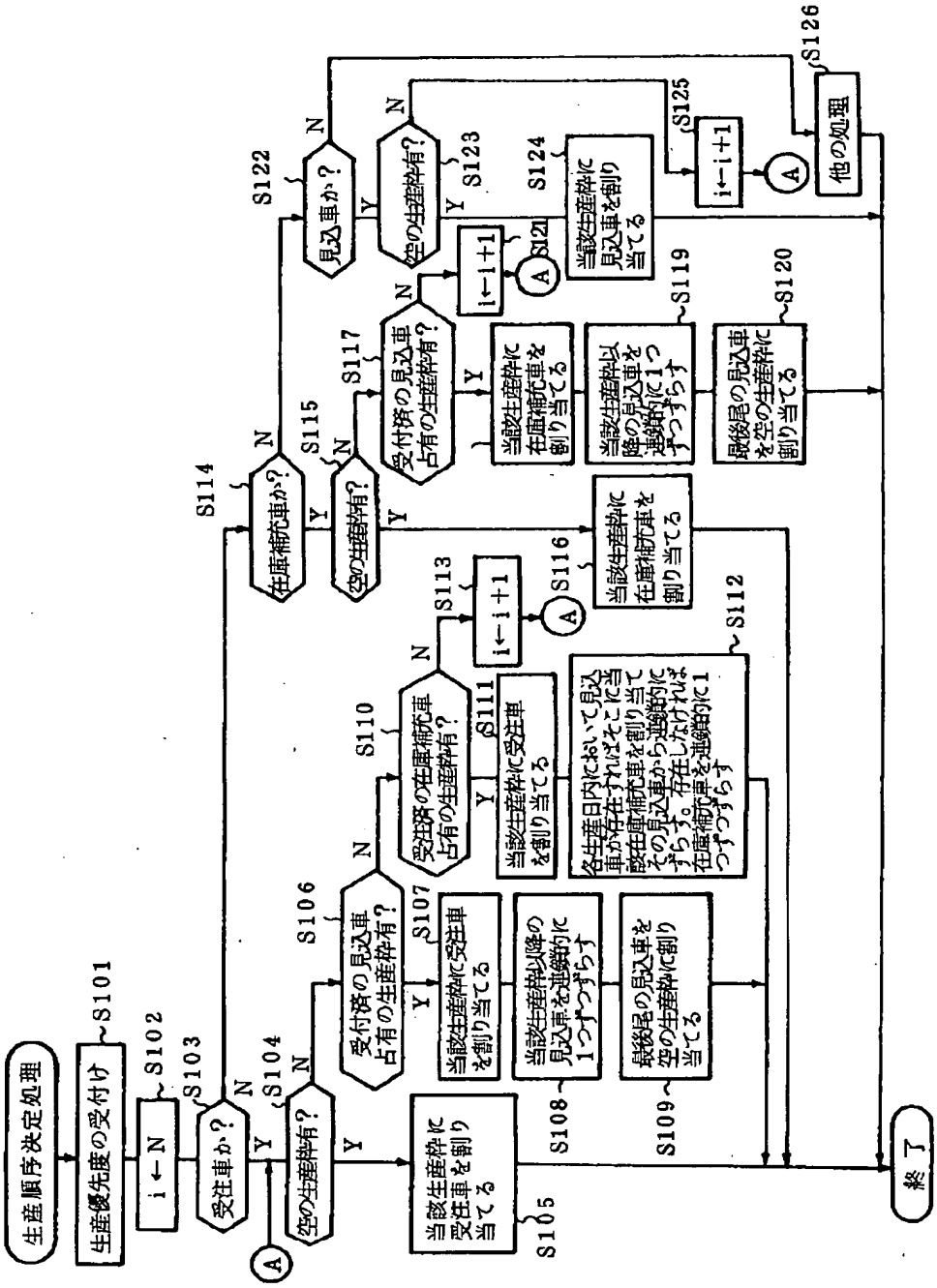


【図６】

生産順序管理テーブル

生産日	生産順序番号	生産優先度	オーダ番号
N	1	A	X123
N	2	A	X234
N	3	A	Y125
N	4	B	Z345
N	5	B	X345
N+1	1	A	Z567
N+1	2	A	T123
N+1	3	B	V234
⋮	⋮	⋮	⋮
N+m	s		

【図３】


生産順序決定処理
生産優先度の受付け
S101
i←N
S102
受注車か？
S103
空の生産枠有？
S104
受付済の見込車占有の生産枠有？
S106
S107
当該生産枠に受注車を割り当てる
当該生産枠以降の見込車を1つずつずらす
当該生産枠に受注車を割り当てる
S105
S108
最後尾の見込車を空の生産枠に割り当てる
S109
受注済の在庫補充車占有の生産枠有？
S110
S111
各生産日内において見込車が存在すればそこに当該在庫補充車を割り当てその見込車から逐次的に1つずつずらす。存在しなければ在庫補充車を逐次的に1つずつずらす
S112
i←i+1
S113
A
S116
当該生産枠に在庫補充車を割り当てる
在庫補充車か？
S114
空の生産枠有？
S115
受付済の見込車占有の生産枠有？
S117
当該生産枠に在庫補充車を割り当てる
当該生産枠以降の見込車を逐次的に1つずつずらす
S119
最後尾の見込車を空の生産枠に割り当てる
S120
見込車か？
S122
空の生産枠有？
S123
i←i+1
S121
A
当該生産枠に見込車を割り当てる
S124
i←i+1
S125
A
他の処理
S126
終了

フロントページの続き

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